PRODUCT DATA

Acoustics & Vibration Instruments

ICP Microphone Preamplifier — Model AWA14604

FEATURES

- ICP compatible
- BNC connector for easy installation and use
- Low output impedance so that long extension cable can be used
- Operates over a wide range of temperature

USES

- Multichannel signal analysis measurements setups with 1/2" Prepolarized Condenser Microphones
- Multichannel sound power measurements
- Multichannel machinery noise measurements

Specifications

PERFORMANCE SPECIFICATIONS

Frequency Response(re. 250Hz): 20Hz ~ 20kHz, ±0.2 dB
10Hz ~ 100kHz, ±0.5 dB

Noise: 4 μV A-weighting
15 μV Lin., 22.4 Hz ~ 22.4 kHz

Attenuation: -0.3 dB

Distortion(THD): <60 dB

INPUT

Input Impedance: 2 GΩ ‖ < 0.5 pF

OUTPUT

Output Impedance: <50 Ω

Max. Output Voltage: 5 V_{RMS}

POWER SUPPLY

Power Requirements: ICP 2 mA ~ 10 mA

Nominal Operating Current: 4 mA

ENVIRONMENT

Operating Temperature: -20℃ ~ +60℃

Humidity: 25% ~ 90%(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions: Φ12.7mm × 70 mm

Weight: <20 g

Connector Type: BNC socket

Thread for Preamplifier Mounting: 11.7 mm-60 UNS

ACCESSORIES:

Included: BNC to BNC coaxial cable 1.5 m × 1

Instruction Manual x 1

Available: 1/2" Measuring Microphone AWA14423, AWA14425, AWA14421 or AWA14422.

We keep the right to change all specifications and included accessories without notice

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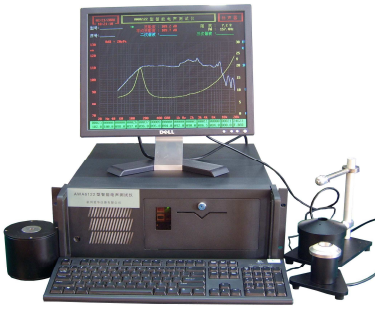
PRODUCT DATA

Acoustics & Vibration Instruments

Electroacoustic Test Systems — Model AWA6122

FEATURES

- **Controlled by industrial computer**
- **Can measuring electroacoustic performance of various electroacoustic devices**
- **Both curves of frequency response can be registered on the CRT for comparisior**
- **The systems calibrated automatically in fixed time**
- **The operation is convenient**



USES

- **Test loudspeakers, receivers, earphones, microphones, and electret mic.etc.**
- **Measure sensitivity, resistance-frequency characterristic, harmonic distortion etc**

Specifications

PERFORMANCE SPECIFICATIONS

Measuring range: Loudspeaker:0.1~20 Pa **Receivers:** 50~136 dBSPL

Microphone:0.1 mV/Pa~3.16 V/Pa **Electret Mic.:**-80~+10 dB(ref.1V/pa)

Frequency range: 20 Hz~20 kHz, 100 Hz~10 kHz, 200 Hz~4 kHz(can be chosen)

Sweep mode: 1/12 octave ~ 1/96 octave, can be chosen

Frequency response of voice source: batter than ±1 dB (100 Hz ~ 10 kHz), also used for non-compress measurement

Distortion measurement: 2th and 3th harmonic distortion **Resistance measurement:** 0~300Ω

POWER SUPPLY

Public power supply: 220 V, 50 Hz (60 Hz)

ENVIRONMENT

Temperature: 10℃ ~ +35℃ **Humidity:** 25% ~ 85% (R.H)

Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimensions(L×W×H,mm): 440 × 420 × 180(not include CRT or LCD)

Weight: < 15 kg (not including CRT or LCD)

SETUP:

All Setup: main unit (include computer,signal generator and measuring amplifier), ear simulator, voice source, sound calibrator and all relative software

AWA 6122S: For Loudspeaker test: main unit,measuring microphone,and reletive software

AWA6122R: For reciever and headphone measurement: main unit, IEC 318 Ear Simulator and relative software

AWA6122M: For microphone and electret microphone measurement: main unit,voice source,measuring mic. and relative software

ACCESSORIES:

Include: Instruction Manual x 1

Available: Sound Level Calibrator AWA6221 (Class 1) CRT or LCD

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PRODUCT DATA

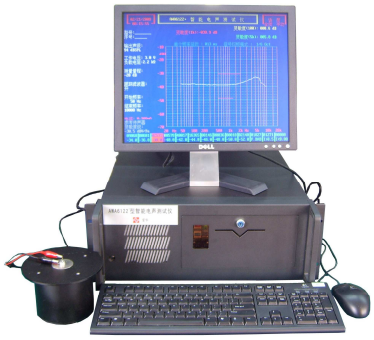
Acoustics & Vibration Instruments

Dual channel Electroacoustic Test Systems

Model AWA6122^{+}M

FEATURES

- **Dual channel independance**
- **Controlled by industrial computer**
- **Can measuring electroacoustic performance of various microphones**
- **Both curves of frequency response can be registered on the CRT for comparision**
- **The operation is convenient**



USES

- **Compare microphones, and electret mic. with standard mic. in coupler**
- **Measure sensitivity, frequency characterristic, harmonic distortion etc.**
- **Measured microphone may be classed automatically with sensitivity.**

Specifications

PERFORMANCE SPECIFICATIONS

Number of channel: 2 × input measuring channels and 1× signal output channel

Measuring range: Microphone: 0.1 mV/Pa~3.16 V/Pa **Electret Mic.:** -80~+10 dB(ref. 1 V/pa)

Frequency range: 20 Hz~20 kHz, 100 Hz~10 kHz, 200 Hz~4 kHz(can be chosen)

Sweep mode: 1/12 octave ~ 1/96 octave, can be chosen

Frequency response of voice source: batter than ±1 dB (from 100 Hz to 10 kHz), also used for non-compress measurement

Distortion measurement: 2th and 3th harmonic distortion

POWER SUPPLY

Public power supply: 220 V, 50 Hz (60 Hz)

ENVIRONMENT

Temperature: 10℃ ~ +35℃ **Humidity:** 25 % ~ 85 % (R.H)

Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimensions(L×W×H,mm): 440 ×420× 180 (not include CRT or LCD)

Weight: < 15 kg (not include CRT or LCD)

ACCESSORIES:

Include:	Sound coupler x 1	Measuring mic. x 1
	Relative software x 1	Instruction Manual x 1
Available:	Sound Level Calibrator AWA6221 (Class 1)	CRT or LCD ×1

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PRODUCT DATA

Acoustics & Vibration Instruments

Signal Generator — Model AWA 1650

Features

- ☼ **Sine, toneburst , white and pink noise generators.**
- ☼ **Frequency sweep and Amplitude sweep.**
- ☼ **In one continuouse range with selectable lower and upper limits.**
- ☼ **Choice of linear and logarithmic sweep with rates from 0.01 Hz to 1.0 Hz.**
- ☼ **Narrow band noise mode is available.**

Uses

- ☼ **Test and calibration of electrical and mechanical equipment.**
- ☼ **Sweep-frequence electro- and building-acoustic measurements.**

Specifications

PERFORMANCE SPECIFICATIONS

Sine Signal Mode:

Freq. Range: 1 Hz ~ 20 kHz — **Freq. Response:** ±0.2 dB(10 Hz ~ 20 kHz), ± 1.0 dB(1 Hz~10 Hz)

Frequency Resolution: 1 mHz — **Frequency Accuration:** 1×10^{-5} ± 1 word

Distortion: 0.1 % — **Output Voltage Range:** 10 μV～10 V(RMS)

Amplitude Attenuator: 0 ~ 100dB — **Attenuator:** 0.01 dB/step to 10 dB/step

Frequence Sweep Mode: — **Sweep:** Linear or logarithmic, single or continuous .

Start and End Freq. Range: 20 Hz ~ 20 kHz — **Sweep Rates:** 0.01 Hz ~ 1 Hz.

Amplitude Sweep Mode: — **Sweep:** Linear or logarithmic, single or continuous .

Freq. Range: 1 Hz ~ 20 kHz — **Sweep Rates:** 0.01 Hz ~ 1 Hz.

Toneburst Mode: — **Sine Signal Frequency :** 1 Hz ~ 20 kHz

Toneburst Periode: 0.125 ms～100 s — **Duration:** 0.125 ms～100 s

Signal Amplitude: 0.1 V ~ 10 V — **Amplitude Attenuator:** 0 ~ 100 dB

White Noise Mode: — **Frequency Range:** 20 Hz ~20 kHz

Max. Output: 7.7 Vpeak — **Crest Factor:** 5.3

Pink Noise Mode: — **Frequency Range:** 20 Hz ~20 kHz

Max. Output: 9.5 Vpeak — **Crest Factor:** 3.9

Narrow Band Noise Mode(Available): — **Frequency Range:** 20 Hz ~20 kHz,

Bandwidth: 1/1 oct, 1/3 oct or 1/6 oct — **Filter Center Frequency:** 16 Hz ~ 16 kHz

Inner Filter: Comply with IEC 61260 class 2, may be use independence.

OUTPUT

Voltage Output: BNC sockets on front and rear panel — **Output Impedence:** 50 Ω

Output Power: 10 W — **Output Impedence:** ≈1 Ω

Indicator: 128×128 graphics back-lit LCD

POWER SUPPLY

Public Power Supply: 220 V, 50 Hz (60 Hz)

OPERATION ENVIRONMENT

Temperature: -10℃ ~ 50℃ — **Humidity:** 25 % ~ 90 % (R.H)

Atmospheric Pressure: 650 hPa ~ 1080 hPa

PHYSICAL

Dimensions: 90 (H) x 240 (W) x 248 (D) mm **Weight:** ≈ 4.5 kg

ACCESSORIES

Included: 1 x Mains Cable; 1 x BNC Plug; 1 x User Manual

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PRODUCT DATA

Acoustics & Vibration Instruments

Mouth Simulator — Model AWA6150

FEATURES

- **Complies with IEEE 269 and CCITT Rec. P.51**
- **Response can be compressed or equalized to obtain a flat acoustic output**
  Accuration simulation of human voice field

USES

- **An acoustic soure for near-flied measurements of microphones**
- **Quality control testing of frequency response and distortion of telephone transmitters and closetalking microphones**

Specifications

PERFORMANCE SPECIFICATIONS

Normal Sound Pressure Level: 94 dB

Frequency Range: 100 Hz~10000Hz

Frequency Response: ±1.0 dB

Loudspeaker Impedance: 6 Ω

Max. Output Sound Pressure Level: 114 dB (at 25 mm from lip ring)

Distortion(THD): < 10 % (at 114dB)

Max. Input Electric Power: 15 W

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃

Humidity: 25% ~ 90%(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions(mm): Φ98 × 95

Weight: appro. 1 kg

ACCESSORIES:

Included: Instruction Manual

Available: Mounte stand

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PRODUCT DATA

Acoustics & Vibration Instruments

Ear Simulator — Model AWA6160

FEATURES

- ☼ **Fulfils Standard：IEC 60318-1**
- ☼ **Acoustical impedance similar to that of the human ear**

USES

- ☼ **Frequency response and sensitivity measurements on telephone receivers and earphones**
- ☼ **Calibration of audiometers**

Specifications

PERFORMANCE SPECIFICATIONS

Used with Microphone：Model AWA14422 1/2 inch pressure field Microphone

Used with Preamplifier：Model AWA14601A Preamplifier

POWER SUPPLY

Operation Voltage Range for the Preamplifier：12V~36V

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃ **Humidity:** 25% ~ 90%(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions: Φ59 mm×75 mm (no include cable) **Weight:** 0.5 kg (include cable)

Coupler volumes:

	Volume	Acoustic Capacitance
V1	2.5 cm^3 ±1%	17.6×10^{-12} m^5 / N
V2	1.8 cm^3 ±1%	12.7×10^{-12} m^5 / N
V3	7.5 cm^3 ±1%	52.8×10^{-12} m^5 / N

Connections between cavities

	Acoustic Resistance	Acoustic Inductance
Annular slit:	6.5×10^6 Ns / m^5	5×10^2 Ns^2 / m^5
Four parallel holes	20×10^6 Ns / m^5	10^4 Ns^2 / m^5

Cable Length：2m ,

ACCESSORIES:

Included: Model AWA14422 1/2" pressure field Microphone × 1

Model AWA14601A Preamplifier × 1 Instruction Manual x 1

Earphone adapter × 1 Leather case × 1

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PRODUCT DATA

Acoustics & Vibration Instruments

Ear Simulator — Model AWA6162

FEATURES

- **Fulfils Standard：IEC 60711**
- **Simple and straightforward calibration procedure**
- **Well defined measuring conditions**
- **Wide range of accessories included**

USES

- **Frequency response,sensitivity and distortion measurements on insert earphones,e.g. used in hearing aids, operator headsets, etc.**
- **Servicing of hearing aids**
- **Production testing of earphones**

Specifications

PERFORMANCE SPECIFICATIONS

Fulfils Standard：IEC 60711

Frequency Rang：20Hz~10000Hz

Acouration of Frequency Response: ≤±0.5dB(200Hz~5000Hz)，≤±1dB(20Hz~10000Hz)

INPUT

Used with Microphone：1/2 inch pressure field Microphone.

Sensitivity: 30 mV/Pa

OUTPUT

Used with Preamplifier：Model AWA14601 Preamplifier

POWER SUPPLY

Operation Voltage Range for the Preamplifier：12V~36V

Operating Current: 1 mA

ENVIRONMENT

Temperature: -10℃ ~ +50℃

Humidity: 25% ~ 90% (R.H)

Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimensions: ϕ24× 40 mm(not include Mic. and Preamplifier)

Weight: < 0.1kg (not include Mic. and Preamplifier)

ACCESSORIES:

Included: 1/2" Prepolarized Condense Mic. AWA14422 × 1

Adaptor for change 1inch to 1/2 inch Mic.

Model 14601B Preamplifier

Instruction Manual x 1

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PRODUCT DATA

Acoustics & Vibration Instruments

Sound Source — Model AWA5510

FEATURES

- ☼ **Sound source with 12 spaces**
- ☼ **As a noise source to sound measurement**

USES

- ☼ **Revebration time measurement**
- ☼ **Sound insulation measurement**
- ☼ **Sound absorption measurement**

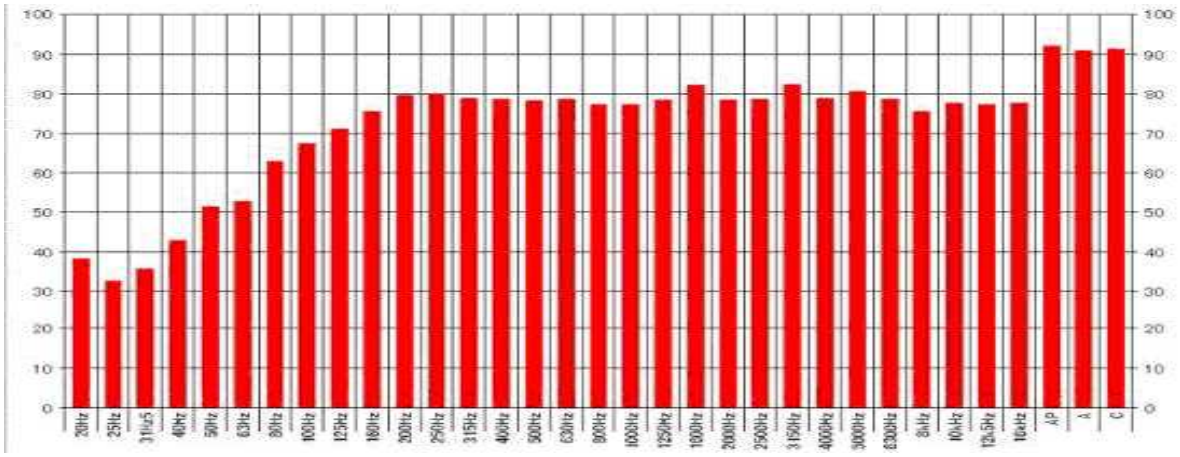
Specifications

PERFORMANCE SPECIFICATIONS

Frequency Range: 100 Hz ~10 kHz

Direction Index: <9 dB

Frequency Spectrum:



INPUT

Input Impedance: 4.5 Ω

Max. Input Voltage: 20 V

OUTPUT

Max. Sound Power Level: 110 dB

Max. Electro Power: 180 W

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃

Humidity: 25% ~ 90%(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimension: S 400 mm

Weight: < 9 kg

ACCESSORIES:

Included: Carry case × 1

Instruction Manual x 1

Available: Power Amplifier AWA5870

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PRODUCT DATA

Acoustics & Vibration Instruments

Vibration Meter — Model AWA5933

FEATURES

- **Compact pocket vibration measuring instrument**
- **a_{peak}, v_{RMS}(Vibration Severity), s_{p-p}**
- **Display measuring results numerically**
- **Power supply of batteries, convenient to use**

USES

- **Machine vibration measurement**
- **To measure acceleration, velocity(Vibration Severity), and displecement**

Specifications

PERFORMANCE SPECIFICATIONS

Measuring Range: a: 0.01~199.9m/s^2
v: 0.01~199.9m/s
s: 0.1~1999 μ m

Meas. Functions: a_{peak}. v_{RMS}(Vibration Severity). s_{p-p}
Frequency Range: 10 Hz ~ 1000Hz
Range: H(hight) and L(Low)

INPUT

Transducer: Piezo-Accelerometer
Frequency Range: 1 Hz ~ 5000Hz

Sensitivity:≈2 pC/m.s^{-2}
Weight: < 20 g

OUTPUT

Indicator: 4 digital (LCD) with signs of battery low
AC Output: 2 V_{Rms}(FSD)

DC Output: 2 V (FSD)

POWER SUPPLY

Battery: 4 × LR6 batteries
Battery Life: Approx. 80 hours
Ext. Power: 4.5 V ~ 9 V DC

Operating Voltage: 4.5 V~ 9 V DC
Operating Current: 12 mA

ENVIRONMENT

Temperature: 0℃ ~ +40℃
Atmospheric Pressure: 65 kPa~108 kPa

Humidity: 25% ~ 90% (R.H)

PHYSICAL

Dimensions(L×W×H): 158 × 72 × 32 mm

Weight: < 0.3 kg (including batteries)

ACCESSORIES:

Included: Piezo-Accelerometer × 1
Batteries LR6 × 4
Available: Mounting magnet × 1

1.2 m extension cable × 1
Instruction Manual x 1

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TM

PRODUCT DATA

Aoustic & Vibration Instruments

Contents

Model AWA6291 Real Time Signal Analyzer
Model AWA6228 Multifunction Sound Level Meter
Series AWA6270+ Noise Analyzers
Model AWA5610P Integrating Sound Level Meter
Model AWA5633 Sound Level Meter
Model AWA5633P Sound Level Meter
Model AWA5661 Precision Impulse Sound Level Meter
Model AWA6221A Sound Level Calibrator
Model AWA6221B Sound Level Calibrator
Series AWA14400 Measuring Microphones
Model AWA14601/14603 Microphone Preamplifiers
Model AWA14604 ICP Microphone Preamplifiers
Model AWA6122 Electroacoustic Test Systems
Model AWA6122+M Double Kannel Electroacoustic Test Systems
Model AWA1650 Multifunction Signal Generator
Model AWA6150 Mouth Simulator
Model AWA6160 Ear Simulator
Model AWA6162 Ear Simulator
Model AWA5510 Sound Power Source
Model AWA5933 Vibration Meter

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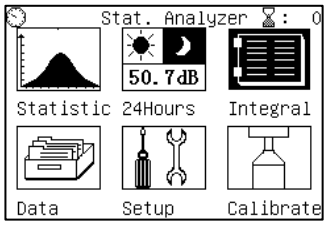
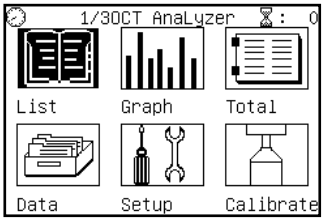
ACOUSTICS & VIBRATION

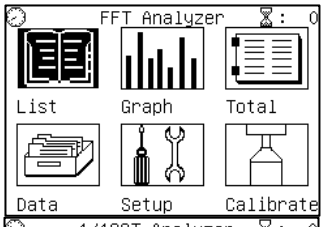
MEASURING INSTRUMENTS

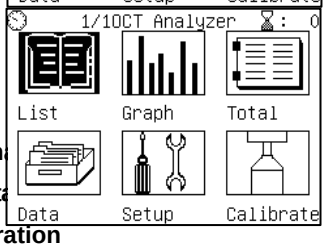
Model AWA6291

Real Time Signal Analyzer









FEATURES

- ☼ **A pocket real-time noise sign**
- ☼ **Real-time octave (and 1/3 octa**
- ☼ **FFT analysis on noise or vibration**
- ☼ **Lower background noise, 90dB linearity range**
- ☼ **Complies with IEC 61672 class 1 and IEC 61260 class 1**
- **Different software could be select based on your specific need**
- ☼ **Auto-start and auto-end**

USES

- ☼ **Comprehensive sound and vibration measurements**
- ☼ **Environment noise certification and 24h monitoring**
- ☼ **Noise profile measurement of industrial noise**
- ☼ **Gathering field-data for further analyses**
- ☼ **Quality-testing of products**
- ☼ **Research and development**

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Specifications:

1 The signal input:
   1) Connector: X9 - 6Z, also LEMO socket;
   2) Signal Input Impedance: 150 kΩ //100 pF;
   3) The Max. Input Voltage: 10 V(RMS);
   4) Input Protection: ± 18 V(RMS).

2 Frequency Range: 10 Hz ~ 20 kHz ± 0.2 dB, 1 Hz ~ 23 kHz (± 1.0 dB)

3 Range Gain: -10 dB, 0 dB, 10 dB, 20 dB, 30 dB, 40 dB.

4 Range Error: ≤0.1 dB.

5 Self-generated Noise Voltage: ＜4μV (1 Hz~23 kHz)

6 Measuring Voltage Range: 15 μV ~ 10 V (RMS).

7 Signal Output:
   1) Connector: Stereo Connector;
   2) Output Impedance: 1 k Ω ;
   3) Max Output Signal Voltage: 3.2 V.

8 Level Linearity Range: >90 dB.

9 A/D Bits: 24 bits.

10 Sampling Frequency: 48 kHz.

11 Anti-aliasing Filter: Cutoff frequency is 23.5 kHz and stopband attenuation is 100 dB.

12 Display: 240×160 graphic LCD, with EL background lighting.

13 Contrast Adjustment: 64-class adjustable.

14 Output Interface: RS 232 interface, which can be connected to the mini-printer to print the measuring results, or connected to PC to transfer the measuring results and real-time analysis results; .

USB Interface, mini B type. Complying with USB 1.1, compatible with USB 2.0, which can transfer the measuring results to PC, or the Flash disk.

15 Power Supply: 4 × LR6 alkaline battery or rechargeable batteries, which can work for over 8 hours continuously. 5 V external power supply is also acceptable.

16 Data Storage: . The measuring results can be saved in 64M bits Flash, or transferred to the Flash disk through USB interface.

17 Internal Clock: Error less than 1 min/month.

18 Measuring point names could be entered enter into the analyzer in English.

19 The analyzer can store 256 calibration records.

20 Starting Time: <10 s.

21 Dimensions: 210 × 90 × 38 (mm).

22 Weight: 0.5 kg. (include batteries)

23 Electromagnetic Compatibility: Comply with the requirements of IEC 61672 on X type sound level meter.

24 Working Environment:
   Working Temperature: -10 ~ 50 ℃
   Storing Temperature: -20 ~ 70 ℃
   Relative Humidity: 25 ~ 90 %

After you equip Model AWA14423 microphone (sensitivity : 50 mV/Pa), AWA14601 preamplifier and the corresponding software, the following index can be obtained in the acoustic measuring:

25 Instrument Background Noise: <15 dB(A), 20 dB(C), 25dB(Z).

Note: 0 dB reference 20 μPa. The below are the same. Input is terminated with 15 pF capacitor .

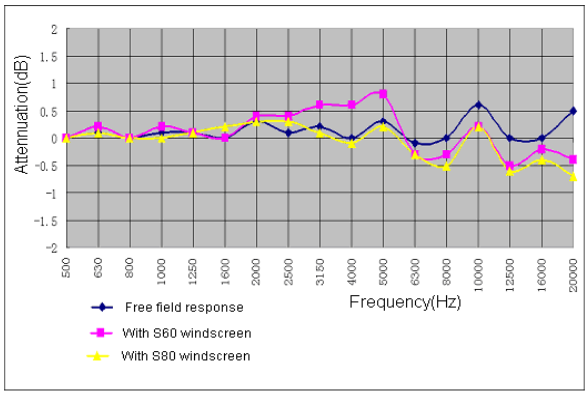
26 Total Noise: <18 dB(A), 23 dB(C), 28 dB(Z).

27 Measuring Range: 25 ~ 140 dB(A), 30 ~ 140 dB(C), 35 ~ 140 dB(Z).

Note: Microphones with different sensitivities have different measuring ranges.

28 Peak C Sound Level Measuring Range:
50 ~ 143 dB.

29 The whole Instrument free field response diagram as foiiow:



Basic software for noise integral measuring

1 Main Function: Noise statistic analysis and integral measuring.

2 Frequency Weighting: Parallel (simultaneous) A, C, Z. Realized by digital filtering.

3 Time Weighting: Parallel (simultaneous) F, S, I, Peak C^{+}, Peak C^{-}.

4 Main Measuring Parameters: L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak+}, C_{peak-}, L_{AFmax}, L_{AFmin}, L_{AFeqT}, L_{ASeqT}, L_{AIeqT}.
Note: X is A, C, Z and Y is F, S, I.

5 Integral Time: 1 s-24 h, set in a given steps or randomly

6 Data Storage: It can store instantaneous data, 1 second integral results and integral measuring result (maximum 128 groups. The measuring results can be stored in Flash disk.

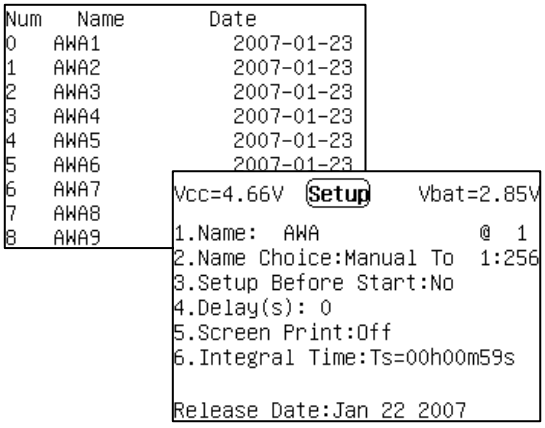
7 Print: Can print analytical results in the mini-print through a string, can also print the contents showed on LCD screen.

8 Display Refresh: 1 Hz for value; 10 Hz for graph

9 Display Resolution: 0.1.dB

10 Fulfils Standard: IEC 61672 Class 1

11 The Data Recall:



Statistical analysis software(S6291-00101)

1 Main Function: The statistical analysis, 24 hours noise monitors automatically.

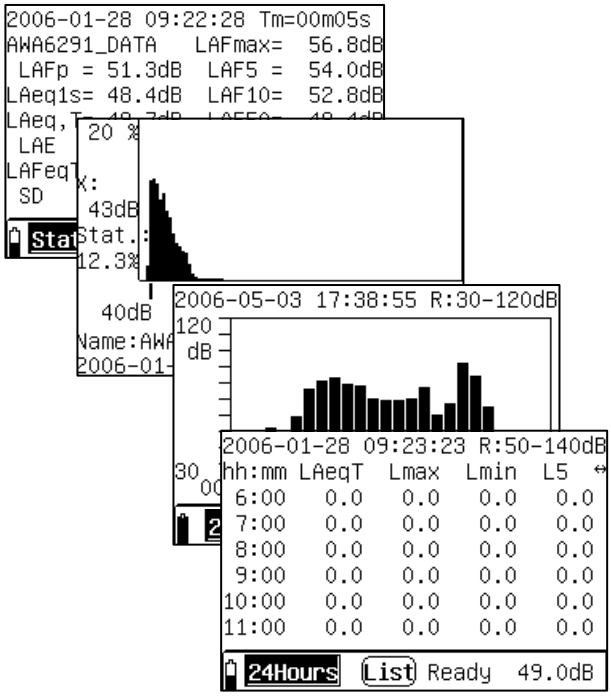
2 Mainly Measure Index:

The statistical analysis menu: LAFp, LAFmax, LAF5, LAF10, LAF50, LAF90, LAF95, LAFmin, SD, LAeq1 s, LAeq, T, LAE, LAFeqT.

24h measures menu: And Ld, Ln, Ldn.

Note: X is frequency weighting A, C, Z; Y is time weighting F, S, I .

3 Display Resolution:0.1 dB.



The OCT spectrum analysis software (S6291－00202)

1 Main Function: Noise real-time OCT spectral analysis and integral measuring.

2 Frequency Weighting: Parallel (simultaneous) A, C, Z. Realized by digital filtering.

3 Filter Type: Parallel (real-time) octave band filter.

4 Filter Center Frequency: 16 Hz, 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1k Hz, 2 kHz, 4 kHz, 8 kHz, 16 kHz.

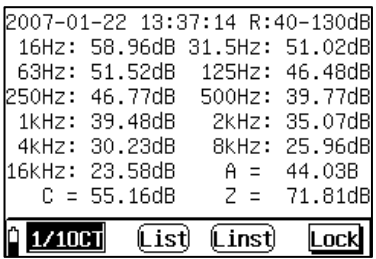
5 Fulfils standards: IEC 61672 Class 1, IEC 61260 Class 1.

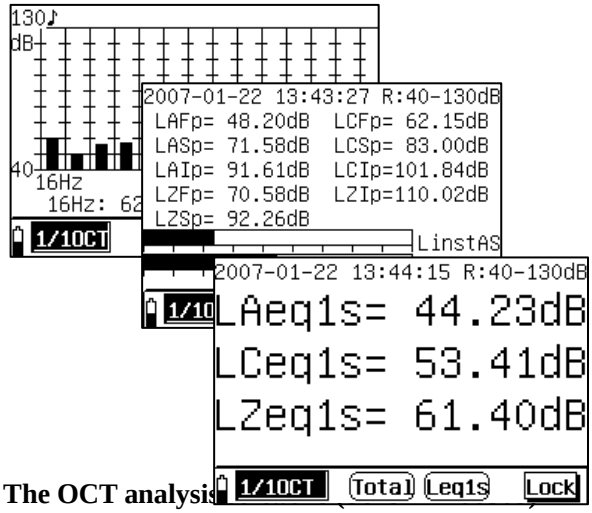
1. 6 Measuring Interface: List interface and graph interface. It can simultaneously display the band sound pressure level of 11 center frequencies as well as A, C and Z weighting sound pressure level.

7 Measuring Parameters: L_{fmi}, $L_{fmeq,1s}$, $L_{fmeq,T}$, L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak}, Tm.

Note: f_m is center frequency; X is frequency weighting A, C, Z. Y is time weighting F, S, I.

8 Real-time Analysis Speed: Approx. 47 times / s (It can simultaneously complete all center frequencies and A, C, Z weighting.).





1/3 The OCT analysis

1 Main Function: Noise real time 1/3 octave spectrum analysis.

2 Filter Type: Parallel (real-time) 1/3 octave band filter.

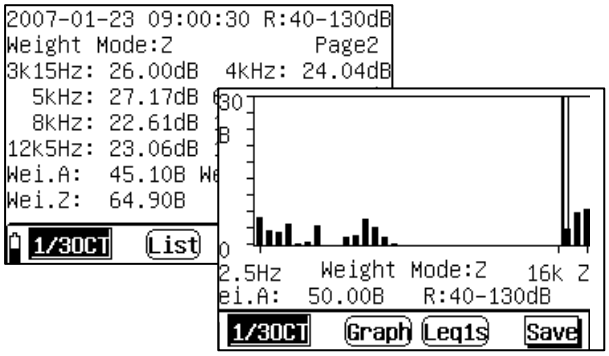
3 Filter Center Frequency: 12.5 Hz, 16 Hz, 20 Hz, 25 Hz, 31.5 Hz, 40 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz, 200 Hz, 250 Hz, 315 Hz, 400 Hz,500 Hz,630 Hz,800 Hz,1 kHz,1.25 kHz,1.6 kHz,2 kHz,2.5 kHz,3.15 kHz,4 kHz,5 kHz,6.3 kHz,8 kHz,10 kHz,12.5 kHz,16 kHz.

4 Fulfils Standards: IEC 61672 Class 1, IEC 61260 Class 1.

5 Measuring Interface: List interface and graph interface. It can simultaneously display the band sound pressure level of 32 center frequencies as well as A, C and Z weighting sound level.

6 Measuring Parameters: $L_{fmeq,1s}$, $L_{fmeq,T}$, L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak}, Tm.

Note: f_m is center frequency; X is frequency weighting A, C, Z. Y is time weighting F, S, I.



FFT analysis software(S6291 －00404)

1 Main Function: Noise real time FFT analysis.

2 line Number: 200 lines on the display.

3 Sampling Frequency: 48 kHz, 24 kHz, 12 kHz,6 kHz, 3 kHz, 1.5 kHz.

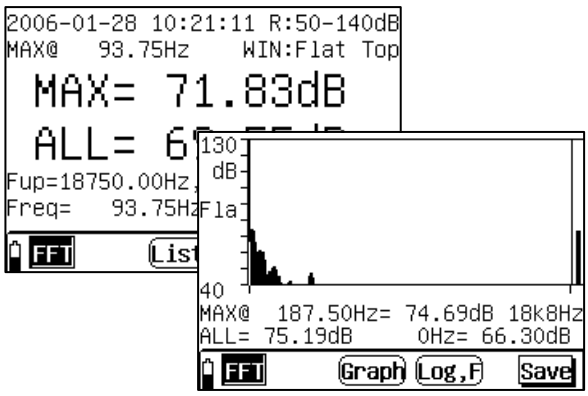
4 Upper Limit of Analysis Frequency: 18.75 kHz, 9375 Hz, 4687 Hz, 2344 Hz, 1172 Hz, 586 Hz.

5 Bandwidth of each line: 93.75 Hz, 46.875 Hz, 23.438 Hz, 11.74 Hz, 5.8594Hz, 2.9297 Hz.

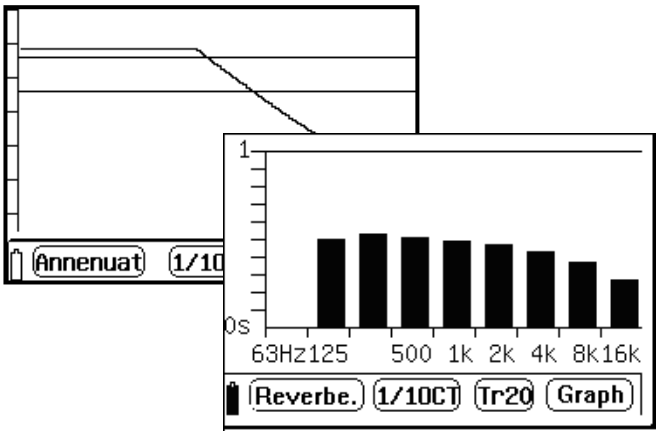
6 Overlap Ratio: 0 %, 50 %, 75 %, 87.5 %, 93.75 %, 97 %.

7 Average Method: index and linearity. The index time

constant is F and S, with F is 125 ms and S is 1s.
8 Measuring Parameters: F time weighting instant value, S Time weighting instant value, 1s equivalent sound pressure level and equivalent continuous sound pressure level in every line; L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak}, Tm.



Reverberation time measurement (S6291－00508)
1、Function：Reverberation time、EDT measurement by integrated impulse response method。
2、Fulfils Standard：ISO 3382；
3、Measuring Parameters：T20、T30、EDT
4、Measuring Range：0.20 s to 20.00 s
5、Wave record time：10 s or 20 s
6、Bandwidth of digital filters：1/1 OCT or 1/3 OCT
7、Center Frequency Ranges： 63 Hz ~ 16 kHz for Oct., 40 Hz ~ 16 kHz for 1/3 Oct.。
8、Date store ：Max 128 groups reverberation time，also translate to U disc。



After you equip relative Accelerometer, AWA14605 charge preamplifier and the corresponding software, the following index can be obtained in the Machine or Human vibration measuring:

Machine vibration measurement

1 Transducer：Piezoelectric Accelerometer，
Charge sensitivity：≈2.5 pC/m·s^{-2}
2 Meas. Ranges：
Acceleration：0.05~5000 m/s^2
Velocity：0.5~50000 mm/s
Displacement：5 μm~500mm
3 Frequency Range：1 Hz~10 kHz

Low frequency band		High frequency band	
acceleration	2Hz—20Hz	acceleration	10Hz—20kHz
velocity	2Hz—1.5kHz	velocity	10Hz—1.5kHz
displacement	2Hz—200Hz	displacement	10Hz—200Hz

4 Integrating time: 1s to 24h set at random
5 Basic measuring error: 5%(15.92Hz as reference frequency)
6 Machine vibration measuring software:

FFT Analysis for machine vibrations (S6291-02406): main measuring parameters: fast time weighting instantaneous value, slow time weighting instantaneous value, 1s equivalent value, equivalent continuous value; virtual value of acceleration, velocity and displacement, peak value, peak peak value and measuring time Tm (note: fm is the center frequency)

Data storage: can store fast time weighting instantaneous value, slow time weighting instantaneous value, 1s integrating value, integrating value; instantaneous value of total analysis, integrating measuring result, 12288 groups at most, also the measuring results can be transferred to the U-disk.

1/3 OCT analysis for machine vibration (S6291-02305):
main measuring parameters: frequency band 1s linearity value (afmeq,1s, $s_{fmeq,1s}$), frequency band linearity average value ($_{afmeq}$, T, v_{fmeq}, T, sf_{meq}, T), virtual value of acceleration, velocity and displacement, peak value, peak peak value and measuring time ™
Data storage: can store 1s linearity average value of 1/3 OCT analysis, linearity average integrating value, integrating measuring result of total analysis, 1228 groups of data at most, also the measuring results can be transferred to U disk.

Human vibration measurement (S6291－01107)：
1 Fulfils Standard：IEC 8041:2005
2 Transducer:
3 axial seat transducer: Used to Whole body vibration,
mini transducer :Used to Hand-Arm vibration
3 Meas. Ranges：Whole body vibration：0.1~1000 m/s^2
Hand-Arm vibration：1~10000 m/s^2
4 Frequency Range：Whole body vibration：0.5 Hz~80 Hz; Hand-Arm vibration：8 Hz~1000 Hz
5 Frequency Weighting: Parallel (simultaneous): W_b、W_c、W_d、W_e、W_j、W_k、W_m
6 Software: Whole body vibration or Hand-Arm vibration is available.

Can choose to install list

Type & Name	Main function
AWA6291 hosts	Host hardware part (Do not include transducer and software),256M USB flesh

	disk, box, receive software.
Model AWA14601 Preamplifier	Pre-amplify, gain is 0 dB.
Model AWA14423 measuring microphone	1/2", Prepolarized condenser microphone, 10 Hz ~ 20 kHz, 50 mV/Pa.
Windscreen S 80 or S 60	Reduce the affection of wind
Mini-printer	Print measuring result, include connecting line, print paper, power supply .
Tripod	
Model CA-YD-106 general accelerometer	0.5 Hz ~ 12 kHz, ~2.5 pC/m.s^{-2}
Extension cable with 5, 10 or 20 m	For AWA14601 and AWA6291
S6291 －00101 statistics analytical software for noise	The statistical analysis, 24 hours noise monitors automatically.
S6291 －00202 The OCT analysis software for noise	Noise real-time OCT spectral analysis and integral measuring.
S6291－00303 1/3 OCT analysis software for noise	Noise real time 1/3 octave spectrum analysis and integral measuring.
S6291－00404 FFT analysis software for noise	Noise real time FFT analysis.
S6291－00508 reverberation time measurement software	measurement reverberation time by integrated impulse response method
S6291 － 02305 1/3 OCT analysis software for machine vibration	Measurement of accelera-tion, velocity, displacement and 1/3 OCT analysis for machine vibration.
S6291—02406 FFT analysis for vibration	Measurement of accelera-tion, velocity, displacement and FFT analysis for machine vibration.
S6291－01107 analysis software for human vibration	Measurement and 1/3OCT analysis for whole body and hand vibration

AIHUA

Model AWA6228 Sound Level Meter

FEATURES

A pocket real-time noise measuring instrument

Real-time octave band analyses is available

Internal 1/1 and 1/3 octave filters

128×128 graphics back-lit LCD

100 dB Level Linearity Range

Comply with IEC 61672 class 1

Different software could be select based on your specific needs

USES

Comprehensive sound measurements

Environment noise certification and 24h monitoring

Noise profile measurement of industrial noise

Peak C sound level measurements

Impulse noise measurements

Specifications:

1 Standard: Comply with IEC 61672 class 1

2 Microphone: 1/2" Prepolarized Condenser Mic. AWA14425; Sensitivity: 40 mV/Pa; Freq. Range: 20 Hz ~ 20kHz; Freq. Response: Free field; Polarized Voltage: 0 V; Ref. direction: Axial direction of microphone;

3 Frequency Range: 20 Hz ~ 20 kHz ± 0.2 dB,

4 Meas. upper Range：130 dBA (re. 20 μ Pa)

5 Self-generated Noise: <20 dB(A), 25 dB(C), 30 dB(Z).

6 Freq. Weighting: Parallel (simultaneous) A, C, Z

7 Time Weighting: Parallel (simultaneous)F, S, I, Peak and Lin. Average

8 Peak C Sound Level Measuring Range: 50 ~ 143 dB.

9 Level Linearity Range: >100 dB.

10 A/D Bits: 24 bits.

11 Sampling Frequency: 48 kHz.

12 Basic Measuring Pala

13 Integrating time: Manual, 10 s, 1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1h, 4h, 8h, 24h or 1 min~59 min

13 Display: 128×128 graphic LCD, with LED background lighting; Display Resolution: 0.1 dB; Display Refresh: 1 Hz for value; 10 Hz for graph

14 Output Interface:

AC Output (full scale): 1.0V AC RMS; Output Impedance: 1k Ω; Connector: φ3.5 mm stereo plug

DC Output : 20mV/dB; Output Impedance: 1k Ω; Connector: DB-9 plug

RS232 Interface: To computer for output some instantaneous sound level selected , Lmax or Leq over 1 second, also to printer for printing .

USB Interface: Available as USB interface when SD card has be selected.

15 Memory: 128 group data with grapfics

16 Internal Clock: Error less than 1 min/month.

17 Measuring point names could be entered enter into the analyzer in English.

19 Print:

18 Power Supply: 4 × LR6 alkaline battery or rechargeable batteries, which can work for over 12 hours continuously. 6 V external power supply is also acceptable.

19 Dimensions: 260 (H) x 80 (W) x 30 (D) mm.

20 Weight: 0.35 kg. (include batteries)

21 Electromagnetic Compatibility: Comply with the requirements of IEC 61672 on X type sound level meter.

22 Environment:

Working Temperature: -10 ~ 50 ℃

Storing Temperature: -20 ~ 70 ℃

Relative Humidity: 25 ~ 90 %

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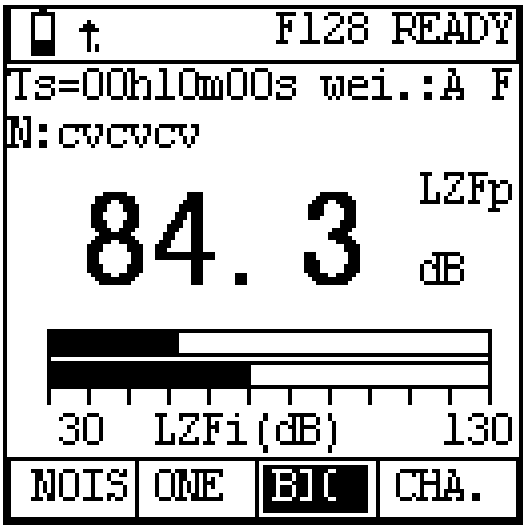
Basic software for integral measuring(S6228-10100)
Basic software for integral measuring (S6228-10100)

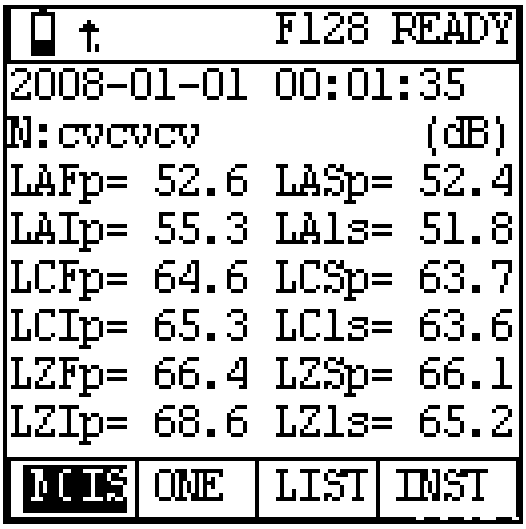
1．Main Function: Noise integral measuring.

2．Main Measuring Parameters: L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak+}, C_{peak-}, L_{AFmax}, L_{AFmin}, L_{AFeqT}, L_{ASeqT}, L_{AIeqT}.

Note: X is A, C, Z and Y is F, S, I.

3.Print: Can print analytical result in the mini-print through a string, can also print the contents showed on LCD screen.





Statistical analysis software(S6291-00101)

1．Main Function: The statistical analysis, 24 hours noise monitors automatically.

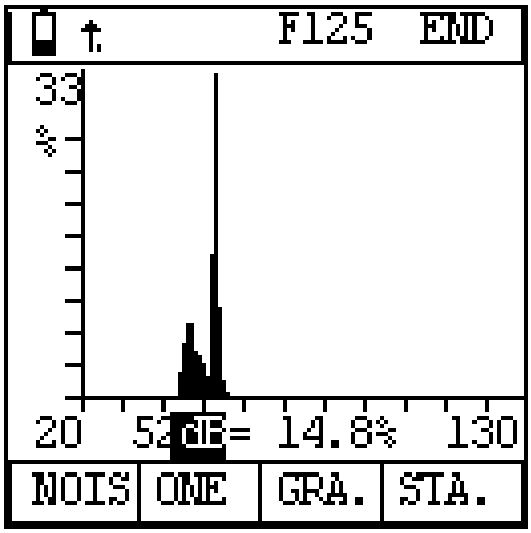
2．Mainly Measure Index:

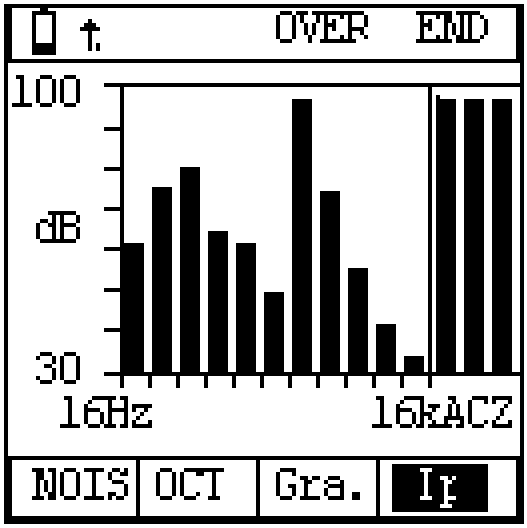
The statistical analysis menu: L_{AFp}, L_{AFmax}, L_{AF5}, L_{AF10}, L_{AF50}, L_{AF90}, L_{AF95}, L_{AF}min, SD, $L_{Aeq1\,s}$, L_{Aeq}, T, L_{AE}, L_{AFeqT}.

24h measures menu: And Ld, Ln, Ldn.

Note: X is frequency weighting A, C, Z; Y is time weighting F, S, I .

3．Display Resolution:0.1 dB.





The OCT spectrum analysis software (S6291－00202)

1．Main Function: Noise real-time OCT spectral analysis and integral measuring.

2．Frequency Weighting: Parallel (simultaneous) A, C, Z. Realized by digital filtering.

3．Filter Type: Parallel (real-time) octave band filter.

4．Filter Center Frequency: 16 Hz, 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1k Hz, 2 k, 4 kHz, 8 kHz, 16 kHz.

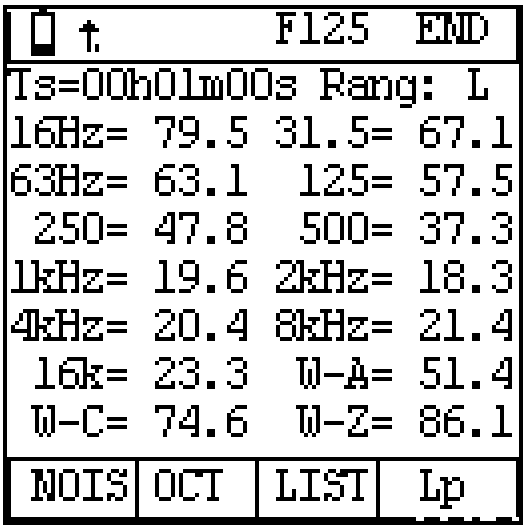
5． Fulfils standards: IEC 61672: 2002 Class 1, IEC 61260: 2001 Class 1.

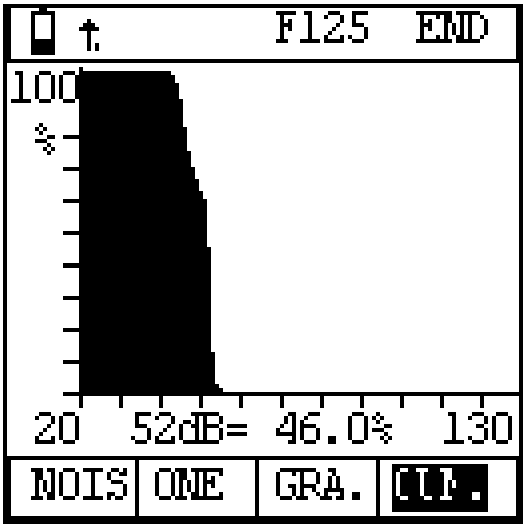
6．Measuring Interface: List interface and graph interface. It can simultaneously display the band sound pressure level of 11 center frequencies as well as A, C and Z weighting sound pressure level.

7．Measuring Parameters: L_{fmi}, $L_{fmeq,1s}$, $L_{fmeq,T}$, L_{xyp}, L_{xyi}, $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE}, E, C_{peak}, Tm.

Note: f_m is center frequency; X is frequency weighting A, C, Z. Y is time weighting F, S, I.

8．Real-time Analysis Speed: Approx. 47 times / s (It can simultaneously complete all center frequencies and A, C, Z weighting.).





Can choose to install list

Type & Name	Main function
AWA6228 hosts	Host hardware part (DO not include tranducer and software),box, receive software.
Model AWA14601 Preamplifier	Pre-amplify, gain is 0 dB.
Model AWA14423 measuring microphone	1/2", Prepolarized condenser microphone, 10 Hz ~ 20 kHz, 50 mV/Pa.
Windscreen S 80 or S 60	Reduce the affection of wind
Mini-printer	Print measuring result, include connecting line, print paper, power supply .
Tripod	
extension cable with 5, 10 or 20 m	For AWA14601 and AWA6291
S6228 －S10100 Basic software	The noise integral measuring
S6228 －S10101 Statistics analytical software	The statistical analysis, 24 hours noise monitors automatically.
S6228 －S10202 The OCT analysis software	Noise real-time OCT spectral analysis and integral measuring.

PRODUCT DATA

Acoustics & Vibration Instruments

Noise Analyzer

Model AWA6270+

FEATURES

- **Selectable application modules for measuring wide range of acoustic parameters**
- **Internal 1/1 and 1/3 octave filters**
- **25 to 130dB measuring range**
- **128 x 64 graphic LCD with back-lit**
- **Lower back ground noise**
- **Comply with IEC 61672-1: 2002 class 1**

USES

- **Precision acoustics measurements**
- **Frequency analysis in 1/1 and 1/3 octave filters with Modular A**
- **Environmental noise measurement and 24 hour monitoring with Modular B**
- **Reverberation time measurements with Modular A**
- **Airport Noise Monitoring and data collect with Modular C**

Specifications

PERFORMANCE SPECIFICATIONS

Standard: Complies with IEC 61672 class 1

Meas. Range : 25 dB ~ 130 dB(A) (re. 20 μPa)

Freq. Range: 10 Hz ~ 20 kHz

Freq. Weighting: A, C, F (flat)

Time Weighting: F, S (Exp. average (RMS) , and Lin. Average

Level Linearity Range: 70 dB

Range: 10 ~ 80 dB, 20 ~ 90 dB, 30 ~ 100 dB, 40 ~ 110 dB , 50 ~ 120 dB , 60 ~ 130 dB

INPUT

Mic.: 1/2" Prepolarized Condenser Mic. AWA14423

Sensitivity: approach 50 mV/Pa

Freq. Range: 10 Hz ~ 20 kHz

Freq. Response: Free field

Polarized Voltage: 0 V

Ref. direction: Axial direction of microphone

Mic. Preamplifier: Model AWA14601

OUTPUT

Detector: Digital detector

Indicator: 128 x 64 graphic LCD with back-lit

AC Output (full scale): 1.1V AC RMS

Output Impedance: 600 Ω

Connector: 3.5 mm jack plug

DC Output (full scale): 2.75 DC V, 0.25 V/dB

Output Impedance: 1000 Ω

Connector: 3.5 mm jack plug

Digital I/O: RS-232C Interface

Connector: RJ45 plug

POWER SUPPLY

Batteries: 6 × LR6

Operating Voltage: 6.5 ~ 9 V DC

Operating current: ≈80 mA

Battery Life: ≈20 hours (continuous use)

External Power: 9 V DC 200 mA

Connector: 1.1 mm coaxial plug

ENVIRONMENT

Temperature: -10℃ ~ 50℃

Humidity: 25% ~ 90% (R.H)

Atmospheric Pressure: 650 hPa ~ 1080 hPa

PHYSICAL

Dimensions: AWA6270+: 290 (H) x 90 (W) x 38 (D) mm; Carrying case: 120 (H) x 500 (W) x 300 (D) mm

Weight: AWA6270+: ≈500 g (including batteries); Carrying case: 3.5 kg (including AWA6270+ and all accessories)

Mounting Screw: UNC 1/4" for direct connection to tripod

ACCESSORIES

Included: 1/2" Prepolarized Condenser Mic. AWA14423, windscreen Ø80 mm x 1, RJ45-RS232 data cable x 1, LR6 battery x 1, disc x 1, instrument manual x 1

Available: Noise Analyser AWA6270+AB, AWA6270+AC, AWA6270+BC, AWA6270+ABC, Sound Level Calibrator AWA6221A, 5 m extension cable, 2 m mic. support rod, SLM tripod, carrying case

A/B/C three modulars mentioned may be selected and combined by users as follow:

Module A - Spectrum Analysis and Reverberation Time Measurements

Meas. Parameters: Lp, Tr (reverberation time)

Measuring Range of Reverberation Time: 0.3 s ~ 10 s

Time Weighting: F, S (Exp. average)

Store Capacity: 2000 groups of graphs/spectrums or reverberation time data

Internal Filter: 1/1 and 1/3 Octave band pass filters conform to IEC 61260 class 2

Center Frequency of 1/1 Octave Filter: 1/1 Octave:31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz

Center Frequency of 1/3 Octave Filter: 20 Hz, 25 Hz, 31.5 Hz, 40 Hz, 50 Hz 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz, 200 Hz, 250 Hz, 315 Hz, 400 Hz, 500 Hz, 630 Hz, 800 Hz, 1 kHz, 1.25 kHz, 1.6 kHz, 2.0 kHz, 2.5 kHz, 3.15 kHz, 4 kHz, 5 kHz, 6.3 kHz, 8 kHz, 10 kHz, 20 kHz

Display: Measured parameters and spectrum graphs and graph of change of instantaneous SPL

Module B - Statistical Analysis

Meas. Parameters: Lp, Leq, Lmax, Lmin, and L5, L10, L50, L90, L95,SD and Ld, Ln, Ldn

Meas. Time: Manual, 10 s, 1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 h, 4 h, 8 h, 24 h (once per hour)

Time Weighting: F, S (Exp. average) and Linear average

Sampling Period: 0.1 s, 0.2 s, 0.5 s, 1 s, 2 s, 5 s, 10 s

24 Hours Automatic Monitoring: measuring once per hour

Intelligent Delete: Burst event may be deleted scientifically

Store Capacity: 2000 groups of data or 80 days of 24 h data

Display: Measured parameters and statistical and accumulated distribution graphs, 24 h distribution graphs and graph of change of instantaneous SPL

Module C - Integrating and Airport Noise Measurements

Meas. Parameters: Lp, Leq, Lmax, Lmin, L_{AE}, E, L_{EPN}

Meas. Time: Manual, 10 s, 1 min, 5 min, 10 min, 15 min, 20 min, 30 min, 1 h, 4 h, 8 h, 24 h

Time Weighting: F, S (Exp. average) and Linear average

Sampling period: 0.1 s, 0.2 s, 0.5 s, 1 s, 2 s, 5 s, 10 s

Sampling Parameters: Lp, $L_{eq.\ 1s}$

Store Capacity: 2000 groups of data or 480,000 time stamped results

Display: Measured parameters and graph of change of instantaneous SPL and calculated airport LEPN

Measurement Configuration	Frequency Analysis	Reverbration Time	Statistical Analysis	24 hours Monitoring	Data Collecting	Airport Noise Monitoring
AWA6270+A	Available	Available				
AWA6270+B			Available	Available		
AWA6270+C					Available	Available
AWA6270+AB	Available	Available	Available	Available		
AWA6270+AC	Available	Available			Available	Available
AWA6270+BC			Available	Available	Available	Available
AWA6270+ABC	Available	Available	Available	Available	Available	Available

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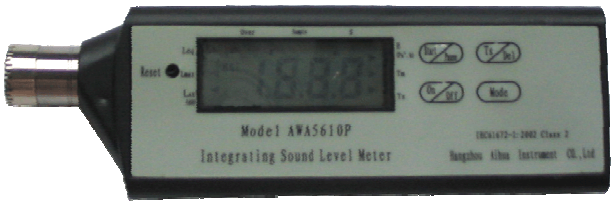
PRODUCT DATA

Acoustics & Vibration Instruments

Integrating Sound Level Meter — Model AWA5610P

FEATURES

- **Compact pocket Integrating Sound Level Meter**
- **Lp, Leq, Lmax, Lmin, L_{AE}, E, T**
- **Auto range**
- **Comply with IEC 61672-1:2002 class 2**



USES

- **Environemental noise certification**
- **Factory noise investigations**
- **Assessment of the risk of hearing damage**

Specifications

PERFORMANCE SPECIFICATIONS

Measuring Range: 40 dB ~130 dB(re.20 μPa)
Frequency Response: 20 Hz ~ 8 kHz
Meas. Functions: Lp, Leq, Lmax, L_{AE}, E, T
Integrating Time: Manual, 10 s, 1 min, 10 min, 15 min, 20 min, 1 h, 4 h, 8 h, 24 h
Sound Exposure: 0.1 ~ 199.9 Pa^2.h
Frequency Weighting: A
Time Weighting: F, S
Standard: IEC 61672 - 1:2002 Class 2

INPUT

Microphone: 1/2" Prepolarized Condense Mic. AWA14421
Frequency Response: Free field
Reference Direction: Axial direction of microphone
Sensitivity: 30 mV/Pa
Frequency Range: 20--8000Hz
Polarized Voltage: 0 V

OUTPUT

Indicator: 4 digital (LCD) with signs of overload and battery low

POWER SUPPLY

Battery: 2 × LR03 batteries
Battery Life: Approx. 20 hours
Operating Voltage: 3V DC
Operating Current: 20mA

ENVIRONMENT

Temperature: 0℃ ~ +40℃
Atmospheric Pressure: 65 kPa ~ 108 kPa
Humidity: 25% ~ 90% (R.H)

PHYSICAL

Dimensions(L×W×H): 130 mm × 40 mm × 16 mm
Weight: < 80 g (including batteries)

ACCESSORIES:

Included: 1/2" Prepolarized Condense Mic. AWA14421 × 1
Battery LR03 × 2
Windscreen Φ35mm × 60 mm × 1
Instruction Manual x 1
Available: Sound Level Calibrator AWA6221B (Class 2)

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PRODUCT DATA

Acoustics & Vibration Instruments

Sound Level Meter — Model AWA5633

FEATURES

- **Compact pocket Sound Level Meter**
- **Lp, Lmax**
- **Auto range**
- **Comply with IEC 61672 class 2**

USES

- **General noise measurement**
- **Factory noise investigations**

Specifications

PERFORMANCE SPECIFICATIONS

Measuring Range: 35 dB ~ 130 dB(re.20 μ Pa)
Frequency Weighting: A
Frequency Response: 20 Hz ~ 8 kHz
Time Weighting: F, S
Meas. Functions: Lp, Lmax
Standard: IEC 61672 Class 2

INPUT

Microphone: 1/2" Prepolarized Condense Mic. AWA14421
Sensitivity: 30 mV/Pa
Reference Direction: Axial direction of microphone

OUTPUT

Indicator: 4 digital (LCD) with signs of overload and battery low
AC Output: Output voltage related to measured sound pressure

POWER SUPPLY

Battery: 4 × LR6 batteries
Operating Voltage: 4.5 V~9 V DC
Battery Life: Approx. 50 hours
Operating Current: 20 mA
Ext. Power: 4.5 V ~ 9 V DC

ENVIRONMENT

Temperature: 0℃ ~ +40℃
Humidity: 25% ~ 90% (R.H)
Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimensions(L×W×H): 210 × 72 × 32 mm
Weight: < 0.3 kg (including batteries)

ACCESSORIES:

Included: 1/2" Prepolarized Condense Mic. AWA14421 × 1
Windscreen Φ35mm × 60 mm × 1
Battery LR6 × 4
Instruction Manual x 1
Available: Sound Level Calibrator AWA6221B (Class 2)

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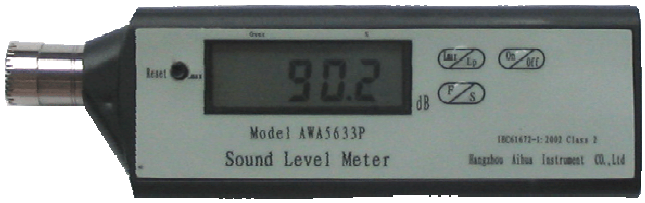
PRODUCT DATA

Acoustics & Vibration Instruments

Sound Level Meter — Model AWA5633P

FEATURE

- **Compact pocket Sound Level Meter**
- **Lp, Lmax**
- **Auto range**
- **Comply with IEC 61672 class 2.**



Specifications

PERFORMANCE SPECIFICATIONS

Measuring Range: 40 dB ~ 130 dB(re.20 μPa)
Frequency Weighting: A
Frequency Response: 20 Hz ~ 8 kHz
Time Weighting: F, S
Meas. Functions: Lp, Lmax
Standard: IEC 61672-1 :2002 Class 2

INPUT

Microphone: 1/2" Prepolarized Condense Mic. AWA14421
Sensitivity: 40 mV/Pa
Reference Direction: Axial direction of microphone

OUTPUT

Indicator: 4 digital (LCD) with signs of overload and battery low

POWER SUPPLY

Battery: 2 × LR03 batteries
Operating Voltage: 3 V DC
Battery Life: Approx. 20 hours
Operating Current: 20 mA

ENVIRONMENT

Temperature: 0℃ ~ +40℃
Humidity: 25% ~ 90% (R.H)
Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimension(L×W×H): 130 × 40 × 16 mm
Weight: < 80g (including batteries)

ACCESSORIES:

Included: 1/2" Prepolarized Condense Mic. AWA14421 × 1
Windscreen Φ35mm × 60 mm × 1
Battery LR03 × 2
Instruction Manual x 1
Available: Sound Level Calibrator AWA6221 (Class 1)
Sound Level Calibrator AWA6221B (Class 2)

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PRODUCT DATA

Acoustic & Vibration Instruments

Precision Impulse Sound Level Meter — Model AWA5661

FEATURES

- **Small and light weight, fit in a pocket**
- **May be measurement impulse sound level**
- **RS-232C interface output are available**
- **Complies with IEC 61672-1:2002 class 1**

USES

- **Community and industrial noise measurement**
- **Checking compliance with noise rating recommendations**
- **Traffic noise measurements**

Specifications

PERFORMANCE SPECIFICATIONS

Measuring Range: 25 dB ~ 140 dB(re.20 μ Pa)
Frequency Weighting: A, C
Frequency Response: 10 Hz ~ 16 kHz
Time Weighting: F, S and I
Meas. Functions: Lp, Lmax
Standard: IEC 61672-1 :2002 Class 1

INPUT

Microphone: 1/2" Prepolarized Condense Mic. AWA14425
Sensitivity: 40 mV/Pa
Reference Direction: Axial direction of microphone
Freq. Response: Free field

OUTPUT

Detector: Digital detector
Indicator: 4 digital (LCD) with signs of overload and battery low
RS-232C Output: The baud rate is 19200, 8 bit data, 1 stop bit.
Connector: RJ45 plug
AC Output: Output voltage related to measured sound pressure and range

POWER SUPPLY

Battery: 4 × LR6 batteries
Operating Voltage: 4.5 V~9 V DC
Battery Life: Approx. 50 hours
Operating Current: 20 mA
Ext. Power: 4.5 V ~ 9 V DC
Connector: 1.1 mm coaxial plug

ENVIRONMENTAL

Temperature: -10℃ ~ +50℃
Humidity: 25% ~ 90% (R.H)
Atmospheric Pressure: 65 kPa~108 kPa

PHYSICAL

Dimensions(L×W×H): 220 × 72 × 32 mm
Weight: < 0.3 kg (including batteries)

ACCESSORIES:

Included: 1/2" Prepolarized Condense Mic. AWA14425 × 1
Windscreen Φ35mm × 60 mm × 1
Battery LR6 × 4
Instruction Manual x 1
Available: Sound Level Calibrator AWA6221 (Class 1)

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PRODUCT DATA

Acoustics & Vibration Instruments

Sound Level Calibrator — Model AWA6221A

FEATURES

- **Comply with IEC 60942 class 1**
- **Pocket size, portable unit**
- **Frequency 1000 Hz, give independence of weighting**
- **Sound pressure independent of microphone equivalent volume**

USES

- **Calibration of sound level meters**
- **Calibration of other sound measurement equipments**

Specifications

PERFORMANCE SPECIFICATIONS

Normal sound pressure level: 94 dB, 114 dB

Normal frequency: 1000 Hz

Sound level accuration: ±0.2 dB(+23 ℃)

±0.3 dB(-10 ℃+50 ℃)

Frequency accuration: ±1 %

Distortion(THD): < 1 %

POWER SUPPLY

Power : Battery 1×6F22(9V)

Nominal Operating Current: 10 mA

BATTERY CHECK

As long as the signal continuse for one minute after the contact is releave, otherwise battery low

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃

Humidity: 25% ~ 90%(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions: ϕ52 ×116 (mm)

Weight: <450 g (include battery)

Microphone Type: 1" and 1/2" (with supplied adaptor)

ACCESSORIES:

Included: Battery 6F22 × 1

Instruction Manual x 1

Adaptor for 1/2" microphone × 1

Leather case × 1

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PRODUCT DATA

Acoustics & Vibration Instruments

Sound Level Calibrator — Model AWA6221B

FEATURES

- ☼ **Comply with IEC 60942 class 2**
- ☼ **Pocket size, portable unit**
- ☼ **Frequency 1000Hz, give independence of weighting**

USES

- ☼ **Calibration of sound level meters**
- ☼ **Calibration of other sound measurement equipments.**

Specifications

PERFORMANCE SPECIFICATIONS

Normal sound pressure level: 94dB
Normal frequency: 1000Hz
Sound level accuration: ±0.3 dB(+23 ℃)
±0.5 dB(-10 ℃+50 ℃)
Frequency accuration: ±2%
Distortion(THD): <1.5 %

POWER SUPPLY

Power : Battery 1×6F22(9V)
Nominal Operating Current: 10 mA

BATTERY CHECK

As long as the signal continuse for one minute after the contact is releave, otherwise battery low

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃
Humidity: 25% ~ 90%(RH)
Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions: Φ40 mm × 100 mm
Weight: <250 g (include battery)
Microphone Type: 1" and 1/2" (with supplied adaptor)

ACCESSORIES:

Included: Battery 6F22 × 1
Instruction Manual x 1
Adaptor for 1/2" microphone × 1
Leather case × 1

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PRODUCT DATA

Acoustics & Vibration Instruments

Condenser Microphone Cartridge Model AWA14421,14422,14423,14425

FEATURES

- ☼ **Comply with IEC 61672 class 1 or 2**
- ☼ **No external polarization voltage required**
- ☼ **Low ambient temperature coefficient**
- ☼ **High resistance to humidity**

USES

- ☼ **Precision acoustic measurements**
- ☼ **Pressure variation measurements**

Specifications

PERFORMANCE SPECIFICATIONS

Model	AWA 14421	AWA14422	AWA14423	AWA14425
Frequency Response Characteristic	Free field	Pressure field	Free field	
Polarization Voltage	0 V			
Open Circuit Sensitivity: mV/Pa(dB re.1V/Pa)	30 (-30)		50 (-26)	40 (-28)
Frequency Response (±2 dB)	20 Hz~12.5 kHz	20 Hz~8 kHz	10 Hz~20 kHz	10 Hz~16 kHz
Dynamic Range	25~140 dB		20~140 dB	22~142 dB
Capacitance at 250 Hz	15 pF		14.5 pF	20pF
Ambient Temperature Coefficient	± 0.02 dB/℃		± 0.01 dB/℃	
Thermal Noise(A-weighting)	19 dB		15 dB	17 dB
Venting	Rear			
Comply with IEC 61672	Class 2		Class 1	

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃ **Humidity**: 25 % ~ 90 %(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Diameter of cartridge: 12.7 mm (without protection grid)
13.2 mm (with protection grid)

Height of cartridge: 17 mm (with protection grid)

Weight: 8 g

Thread for preamplifier mounting: 11.7 mm - 60UNS

Thread for protection grid or coupler mounting: 12.7 mm - 60UNS

ACCESSORIES:

Included: Leather case × 1 Instruction Manual x 1

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PRODUCT DATA

Acoustics & Vibration Instruments

Microphone Preamplifier — Model AWA14601, 14603

FEATURES

- ☼ **1/2" prepolarized microphone compatible**
- ☼ **Lemo connector with cable for easy installation and use**
- ☼ **Low output impedance so that long extension cable can be used**

USES

- ☼ **Signal analysis measurements setups**
- ☼ **With 1/2" Prepolarized Condenser Microphones**
- ☼ **Sound power measurements**
- ☼ **Machinery noise measurements**

Specifications

PERFORMANCE SPECIFICATIONS

Frequency Response(re. 250 Hz): 20 Hz ~ 20 kHz, ±0.2 dB
5 Hz ~ 200 kHz, ±0.5 dB (for 14601)
5 Hz ~ 50 kHz, ±0.5 dB (for 14603)

Noise: 4 μV A-weighting
10 μV Lin., 22.4 Hz ~ 22.4 kHz

Attenuation: -0.3 dB (for 14601)
20 dB (for 14603)

Distortion(THD): <-60 dB

INPUT

Input Impedance: 2 GΩ ‖ < 0.5 pF

OUTPUT

Output Impedance: <500 Ω (for 14601)
<50 Ω (for 14603)

Max. Output Voltage: 20 V_{p-p} (at power voltage 30V)

POWER SUPPLY

Power Voltage: 12 V~36 V

Operating Current: 1 mA

ENVIRONMENT

Operating Temperature: -10℃ ~ +50℃

Humidity: 25 % ~ 90 %(RH)

Atmospheric Pressure: 65 kPa ~ 108 kPa

PHYSICAL

Dimensions: Φ12.7mm × 70 mm

Weight: <20 g (not include cable)

Connector Type: Lemo connector or 6 pin socket

Thread for Preamplifier Mounting: 11.7 mm-60 UNS

ACCESSORIES:

Included: 6 pin socket to Lamo connector 1.5 m × 1
Instruction Manual x 1

Available: 1/2" Measuring Microphone AWA14423, AWA14425, AWA14421 or AWA14422.

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